



SEQUENCE LISTING

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Fowler, Timothy  
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<120> Novel EGIIII-Like Enzymes, DNA Encoding  
Such Enzymes and Methods for Producing Such Enzymes

<130> GC516-2-US

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<160> 68

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<213> Artificial Sequence

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Ser Val Lys Ser Tyr

1 5

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<213> Artificial Sequence

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<400> 5

Lys Asn Phe Phe Asn Tyr

1 5

<210> 6

<211> 702

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<213> Trichoderma reesei

<400> 6

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tcagccgggt ctggatttgg ctgcgtgacg gcggtatcgc tcagcggcgg ggcctcctgg 180  
cacgcagact ggcagtgggtc cggcggccag aacaacgtca agtcgtacca gaactctcag 240  
attgccattc cccagaagag gaccgtcaac agcatcagca gcatgcccac cactgccagc 300  
tggagctaca gcgggagcaa catccgcgct aatggttgcg atgacttggt caccgcagcc 360  
aaccggaatc atgtcacgta ctcgggagac tacgaactca tgatctggct tggcaaatac 420  
ggcgatattg ggccgattgg gtcctcacag ggaacagtca acgtcgggtg ccagagctgg 480  
acgctctact atggctacaa cggagccatg caagtctatt cctttgtggc ccagaccaac 540  
actaccaact acagcggaga tgtcaagaac ttcttcaatt atctccgaga caataaagga 600  
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<210> 7

<211> 232

<212> PRT

<213> Trichoderma reesei

<400> 7

Met Lys Phe Leu Gln Val Leu Pro Ala Leu Ile Pro Ala Ala Leu Ala

1 5 10 15

Gln Thr Ser Cys Asp Gln Trp Ala Thr Phe Thr Gly Asn Gly Tyr Thr

20 25 30

Val Ser Asn Asn Leu Trp Gly Ala Ser Ala Gly Ser Gly Phe Gly Cys

35 40 45

Val	Thr	Ala	Val	Ser	Leu	Ser	Gly	Gly	Ala	His	Ala	Asp	Trp	Gln	Trp
50						55					60				
Ser	Gly	Gly	Gln	Asn	Asn	Val	Lys	Ser	Tyr	Gln	Asn	Ser	Gln	Ile	Ala
65					70					75					80
Ile	Pro	Gln	Lys	Arg	Thr	Val	Asn	Ser	Ile	Ser	Ser	Met	Pro	Thr	Thr
				85					90					95	
Ala	Ser	Trp	Ser	Tyr	Ser	Gly	Ser	Asn	Ile	Arg	Ala	Asn	Val	Ala	Tyr
			100					105					110		
Asp	Leu	Phe	Thr	Ala	Ala	Asn	Pro	Asn	His	Val	Thr	Tyr	Ser	Gly	Asp
		115					120					125			
Tyr	Glu	Leu	Met	Ile	Trp	Leu	Gly	Lys	Tyr	Gly	Asp	Ile	Gly	Pro	Ile
	130					135					140				
Gly	Ser	Ser	Gln	Gly	Thr	Val	Asn	Val	Gly	Gly	Gln	Ser	Trp	Thr	Leu
145					150					155					160
Tyr	Tyr	Gly	Tyr	Asn	Gly	Ala	Met	Gln	Val	Tyr	Ser	Phe	Val	Ala	Gln
				165					170					175	
Thr	Asn	Thr	Thr	Asn	Tyr	Ser	Gly	Asp	Val	Lys	Asn	Phe	Phe	Asn	Tyr
			180					185					190		
Leu	Arg	Asp	Asn	Lys	Gly	Tyr	Asn	Ala	Ala	Gly	Gln	Tyr	Val	Leu	Ser
		195					200				205				
Tyr	Gln	Phe	Gly	Thr	Glu	Pro	Phe	Thr	Gly	Ser	Gly	Thr	Leu	Asn	Val
	210					215					220				
Ala	Ser	Trp	Thr	Ala	Ser	Ile	Asn								
225					230										

<210> 8

<211> 234

<212> PRT

<213> Trichoderma reesei

<400> 8

Met	Lys	Phe	Leu	Gln	Val	Leu	Pro	Ala	Leu	Ile	Pro	Ala	Ala	Leu	Ala
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Gln	Thr	Ser	Cys	Asp	Gln	Trp	Ala	Thr	Phe	Thr	Gly	Asn	Gly	Tyr	Thr
			20					25					30		
Val	Ser	Asn	Asn	Leu	Trp	Gly	Ala	Ser	Ala	Gly	Ser	Gly	Phe	Gly	Cys
		35					40					45			
Val	Thr	Ala	Val	Ser	Leu	Ser	Gly	Gly	Ala/Ser	Trp	His	Ala	Asp	Trp	
	50					55				60					
Gln	Trp	Ser	Gly	Gly	Gln	Asn	Asn	Val	Lys	Ser	Tyr	Gln	Asn	Ser	Gln
65					70					75				80	
Ile	Ala	Ile	Pro	Gln	Lys	Arg	Thr	Val	Asn	Ser	Ile	Ser	Ser	Met	Pro
				85					90					95	
Thr	Thr	Ala	Ser	Trp	Ser	Tyr	Ser	Gly	Ser	Asn	Ile	Arg	Ala	Asn	Val
			100					105					110		
Ala	Tyr	Asp	Leu	Phe	Thr	Ala	Ala	Asn	Pro	Asn	His	Val	Thr	Tyr	Ser
		115					120				125				
Gly	Asp	Tyr	Glu	Leu	Met	Ile	Trp	Leu	Gly	Lys	Tyr	Gly	Asp	Ile	Gly
	130					135					140				
Pro	Ile	Gly	Ser	Ser	Gln	Gly	Thr	Val	Asn	Val	Gly	Gly	Gln	Ser	Trp
145					150					155					160
Thr	Leu	Tyr	Tyr	Gly	Tyr	Asn	Gly	Ala	Met	Gln	Val	Tyr	Ser	Phe	Val
				165					170					175	
Ala	Gln	Thr	Asn	Thr	Thr	Asn	Tyr	Ser	Gly	Asp	Val	Lys	Asn	Phe	Phe
			180					185					190		
Asn	Tyr	Leu	Arg	Asp	Asn	Lys	Gly	Tyr	Asn	Ala	Ala	Gly	Gln	Tyr	Val
		195				200						205			
Leu	Ser	Tyr	Gln	Phe	Gly	Thr	Glu	Pro	Phe	Thr	Gly	Ser	Gly	Thr	Leu
	210					215					220				
Asn	Val	Ala	Ser	Trp	Thr	Ala	Ser	Ile	Asn						
225					230										

<210> 9  
 <211> 234  
 <212> PRT  
 <213> Hypocrea schweinitzii

<400> 9  
 Met Lys Phe Leu Gln Val Leu Pro Ala Ile Leu Pro Ala Ala Leu Ala  
 1 5 10 15  
 Gln Thr Ser Cys Asp Gln Tyr Ala Thr Phe Ser Gly Asn Gly Tyr Ile  
 20 25 30  
 Val Ser Asn Asn Leu Trp Gly Ala Ser Ala Gly Ser Gly Phe Gly Cys  
 35 40 45  
 Val Thr Ser Val Ser Leu Asn Gly Ala Ala Ser Trp His Ala Asp Trp  
 50 55 60  
 Gln Trp Ser Gly Gly Gln Asn Asn Val Lys Ser Tyr Gln Asn Val Gln  
 65 70 75 80  
 Ile Asn Ile Pro Gln Lys Arg Thr Val Asn Ser Ile Gly Ser Met Pro  
 85 90 95  
 Thr Thr Ala Ser Trp Ser Tyr Ser Gly Ser Asp Ile Arg Ala Asn Val  
 100 105 110  
 Ala Tyr Asp Leu Phe Thr Ala Ala Asn Pro Asn His Val Thr Tyr Ser  
 115 120 125  
 Gly Asp Tyr Glu Leu Met Ile Trp Leu Gly Lys Tyr Gly Asp Ile Gly  
 130 135 140  
 Pro Ile Gly Ser Ser Gln Gly Thr Val Asn Val Gly Gly Gln Thr Trp  
 145 150 155 160  
 Thr Leu Tyr Tyr Gly Tyr Asn Gly Ala Met Gln Val Tyr Ser Phe Val  
 165 170 175  
 Ala Gln Ser Asn Thr Thr Ser Tyr Ser Gly Asp Val Lys Asn Phe Phe  
 180 185 190  
 Asn Tyr Leu Arg Asp Asn Lys Gly Tyr Asn Ala Gly Gly Gln Tyr Val  
 195 200 205  
 Leu Ser Tyr Gln Phe Gly Thr Glu Pro Phe Thr Gly Ser Gly Thr Leu  
 210 215 220  
 Asn Val Ala Ser Trp Thr Ala Ser Ile Asn  
 225 230

<210> 10  
 <211> 259  
 <212> PRT  
 <213> Aspergillus aculeatus

<400> 10  
 Met Lys Ala Phe His Leu Leu Ala Ala Leu Ala Gly Ala Ala Val Ala  
 1 5 10 15  
 Gln Gln Ala Gln Leu Cys Asp Gln Tyr Ala Thr Tyr Thr Gly Gly Val  
 20 25 30  
 Tyr Thr Ile Asn Asn Asn Leu Trp Gly Lys Asp Ala Gly Ser Gly Ser  
 35 40 45  
 Gln Cys Thr Thr Val Asn Ser Ala Ser Ser Ala Gly Thr Ser Trp Ser  
 50 55 60  
 Thr Lys Trp Asn Trp Ser Gly Gly Glu Asn Ser Val Lys Ser Tyr Ala  
 65 70 75 80  
 Asn Ser Gly Leu Thr Phe Asn Lys Lys Leu Val Ser Gln Ile Ser Gln  
 85 90 95  
 Ile Pro Thr Thr Ala Arg Trp Ser Tyr Asp Asn Thr Gly Ile Arg Ala  
 100 105 110  
 Asp Val Ala Tyr Asp Leu Phe Thr Ala Ala Asp Ile Asn His Val Thr  
 115 120 125  
 Trp Ser Gly Asp Tyr Glu Leu Met Ile Trp Leu Ala Arg Tyr Gly Gly

130 135 140  
 Val Gln Pro Ile Gly Ser Gln Ile Ala Thr Ala Thr Val Asp Gly Gln  
 145 150 155 160  
 Thr Trp Glu Leu Trp Tyr Gly Ala Asn Gly Ser Gln Lys Thr Tyr Ser  
 165 170 175  
 Phe Val Ala Pro Thr Pro Ile Thr Ser Phe Gln Gly Asp Val Asn Asp  
 180 185 190  
 Phe Phe Lys Tyr Leu Thr Gln Asn His Gly Phe Pro Ala Ser Ser Gln  
 195 200 205  
 Tyr Leu Ile Thr Leu Gln Phe Gly Thr Glu Pro Phe Thr Gly Gly Pro  
 210 215 220  
 Ala Thr Leu Ser Val Ser Asn Trp Ser Ala Ser Val Gln Gln Ala Gly  
 225 230 235 240  
 Phe Glu Pro Trp Gln Asn Gly Ala Gly Leu Ala Val Asn Ser Phe Ser  
 245 250 255  
 Ser Thr Val

<210> 11  
 <211> 239  
 <212> PRT  
 <213> Aspergillus kawachii (1)

<400> 11  
 Met Lys Leu Ser Met Thr Leu Ser Leu Phe Ala Ala Thr Ala Met Gly  
 1 5 10 15  
 Gln Thr Met Cys Ser Gln Tyr Asp Ser Ala Ser Ser Pro Pro Tyr Ser  
 20 25 30  
 Val Asn Gln Asn Leu Trp Gly Glu Tyr Gln Gly Thr Gly Ser Gln Cys  
 35 40 45  
 Val Tyr Val Asp Lys Leu Ser Ser Ser Gly Ala Ser Trp His Thr Lys  
 50 55 60  
 Trp Thr Trp Ser Gly Gly Glu Gly Thr Val Lys Ser Tyr Ser Asn Ser  
 65 70 75 80  
 Gly Leu Thr Phe Asp Lys Lys Leu Val Ser Asp Val Ser Ser Ile Pro  
 85 90 95  
 Thr Ser Val Thr Trp Ser Gln Asp Asp Thr Asn Val Gln Ala Asp Val  
 100 105 110  
 Ser Tyr Asp Leu Phe Thr Ala Ala Asn Ala Asp His Ala Thr Ser Ser  
 115 120 125  
 Gly Asp Tyr Glu Leu Met Ile Trp Leu Ala Arg Tyr Gly Ser Val Gln  
 130 135 140  
 Pro Ile Gly Lys Gln Ile Ala Thr Ala Thr Val Gly Gly Lys Ser Trp  
 145 150 155 160  
 Glu Val Trp Tyr Gly Thr Ser Thr Gln Ala Gly Ala Glu Gln Lys Thr  
 165 170 175  
 Tyr Ser Phe Val Ala Gly Ser Pro Ile Asn Ser Trp Ser Gly Asp Ile  
 180 185 190  
 Lys Asp Phe Phe Asn Tyr Leu Thr Gln Asn Gln Gly Phe Pro Ala Ser  
 195 200 205  
 Ser Gln His Leu Ile Thr Leu Gln Cys Gly Thr Glu Pro Phe Thr Gly  
 210 215 220  
 Gly Pro Ala Thr Phe Thr Val Asp Asn Trp Thr Ala Ser Val Asn  
 225 230 235

<210> 12  
 <211> 239  
 <212> PRT  
 <213> Aspergillus kawachii (2)

<400> 12

Met Lys Ala Phe His Leu Leu Ala Ala Leu Ser Gly Ala Ala Val Ala  
 1 5 10 15  
 Gln Gln Ala Gln Leu Cys Asp Gln Tyr Ala Thr Tyr Thr Gly Gly Val  
 20 25 30  
 Tyr Thr Ile Asn Asn Asn Leu Trp Gly Lys Asp Ala Gly Ser Gly Ser  
 35 40 45  
 Gln Cys Thr Thr Val Asn Ser Ala Ser Ser Ala Gly Thr Ser Trp Ser  
 50 55 60  
 Thr Lys Trp Asn Trp Ser Gly Gly Glu Asn Ser Val Lys Ser Tyr Ala  
 65 70 75 80  
 Asn Ser Gly Leu Ser Phe Asn Lys Lys Leu Val Ser Gln Ile Ser His  
 85 90 95  
 Ile Pro Thr Ala Arg Trp Ser Tyr Asp Asn Thr Cys Ile Arg Arg  
 100 105 110  
 Gly Arg Ala Tyr Asp Leu Phe Thr Ala Ala Asp Ile Asn His Val Thr  
 115 120 125  
 Trp Ser Gly Asp Tyr Glu Leu Met Ile Trp Leu Ala Arg Tyr Gly Gly  
 130 135 140  
 Val Gln Pro Leu Gly Ser Gln Ile Ala Thr Ala Thr Val Glu Gly Gln  
 145 150 155 160  
 Thr Trp Glu Leu Trp Tyr Gly Val Asn Gly Ala Gln Lys Thr Tyr Ser  
 165 170 175  
 Phe Val Ala Ala Asn Pro Ile Thr Ser Phe Gln Gly Asp Ile Asn Asp  
 180 185 190  
 Phe Phe Lys Tyr Leu Thr Gln Asn His Gly Phe Pro Ala Ser Ser Gln  
 195 200 205  
 Tyr Leu Ile Ile Leu Ala Leu Gln Phe Gly Thr Glu Pro Phe Thr Gly  
 210 215 220  
 Gly Pro Ala Thr Leu Asn Val Ala Asp Trp Ser Ala Ser Val Gln  
 225 230 235

<210> 13

<211> 247

<212> PRT

<213> Aspergillus oryzae

<400> 13

Met Lys Leu Ser Leu Ala Leu Ala Thr Leu Val Ala Thr Ala Phe Ser  
 1 5 10 15  
 Gln Glu Leu Cys Ala Gln Tyr Asp Ser Ala Ser Ser Pro Pro Tyr Ser  
 20 25 30  
 Val Asn Asn Asn Leu Trp Gly Gln Asp Ser Gly Thr Gly Phe Thr Ser  
 35 40 45  
 Gln Cys Val Tyr Val Asp Asn Leu Ser Ser Ser Gly Ala Ala Trp His  
 50 55 60  
 Thr Thr Trp Thr Trp Asn Gly Gly Glu Gly Ser Val Lys Ser Tyr Ser  
 65 70 75 80  
 Asn Ser Ala Val Thr Phe Asp Lys Lys Leu Val Ser Asp Val Gln Ser  
 85 90 95  
 Ile Pro Thr Asp Val Glu Trp Ser Gln Asp Phe Thr Asn Thr Asn Val  
 100 105 110  
 Asn Ala Asp Val Ala Tyr Asp Leu Phe Thr Ala Ala Asp Gln Asn His  
 115 120 125  
 Val Thr Tyr Ser Gly Asp Tyr Glu Leu Met Ile Trp Leu Ala Arg Tyr  
 130 135 140  
 Gly Thr Ile Gln Pro Ile Gly Thr Gln Ile Asp Thr Ala Thr Val Glu  
 145 150 155 160  
 Gly His Thr Trp Glu Leu Trp Phe Thr Tyr Gly Thr Thr Ile Gln Ala  
 165 170 175  
 Gly Ala Glu Gln Lys Thr Tyr Ser Phe Val Ser Ala Thr Pro Ile Asn  
 180 185 190

Thr Phe Gly Gly Asp Ile Lys Lys Phe Phe Asp Tyr Ile Thr Ser Lys  
 195 200 205  
 His Ser Phe Pro Ala Ser Ala Gln Tyr Leu Ile Asn Met Gln Phe Gly  
 210 215 220  
 Thr Glu Pro Phe Phe Thr Thr Gly Gly Pro Val Thr Phe Thr Val Pro  
 225 230 235 240  
 Asn Trp Thr Ala Ser Val Asn  
 245

<210> 14  
 <211> 254  
 <212> PRT  
 <213> Humicola grisei

<400> 14  
 Met Leu Lys Ser Ala Leu Leu Leu Gly Ala Ala Ala Val Ser Val Gln  
 1 5 10 15  
 Ser Ala Ser Ile Pro Thr Ile Pro Ala Asn Leu Glu Pro Arg Gln Ile  
 20 25 30  
 Arg Ser Leu Cys Glu Leu Tyr Gly Tyr Trp Ser Gly Asn Gly Tyr Glu  
 35 40 45  
 Leu Leu Asn Asn Leu Trp Gly Lys Asp Thr Ala Thr Ser Gly Trp Gln  
 50 55 60  
 Cys Thr Tyr Leu Asp Gly Thr Asn Asn Gly Gly Ile Gln Trp Asn Thr  
 65 70 75 80  
 Ala Trp Glu Trp Gln Gly Ala Pro Asp Asn Val Lys Asn Tyr Pro Tyr  
 85 90 95  
 Val Gly Lys Gln Ile Gln Arg Gly Arg Lys Ile Ser Asp Ile Asn Ser  
 100 105 110  
 Met Arg Thr Ser Val Ser Trp Thr Tyr Asp Arg Thr Asp Leu Arg Ala  
 115 120 125  
 Asn Val Ala Tyr Asp Val Phe Thr Ala Arg Asp Pro Asp His Pro Asn  
 130 135 140  
 Trp Gly Gly Asp Tyr Glu Leu Met Ile Trp Leu Ala Arg Tyr Gly Gly  
 145 150 155 160  
 Ile Tyr Pro Ile Gly Thr Phe His Ser Gln Val Asn Leu Ala Gly Arg  
 165 170 175  
 Thr Trp Asp Leu Trp Thr Gly Tyr Asn Gly Asn Met Arg Val Tyr Ser  
 180 185 190  
 Phe Leu Pro Pro Ser Gly Asp Ile Arg Asp Phe Ser Cys Asp Ile Lys  
 195 200 205  
 Asp Phe Phe Asn Tyr Leu Glu Arg Asn His Gly Tyr Pro Ala Arg Glu  
 210 215 220  
 Gln Asn Leu Ile Val Tyr Gln Val Gly Thr Glu Cys Phe Thr Gly Gly  
 225 230 235 240  
 Pro Ala Arg Phe Thr Cys Arg Asp Phe Arg Ala Asp Leu Trp  
 245 250

<210> 15  
 <211> 254  
 <212> PRT  
 <213> Humicola insolens

<400> 15  
 Met Leu Lys Ser Ala Leu Leu Leu Gly Pro Ala Ala Val Ser Val Gln  
 1 5 10 15  
 Ser Ala Ser Ile Pro Thr Ile Pro Ala Asn Leu Glu Pro Arg Gln Ile  
 20 25 30  
 Arg Ser Leu Cys Glu Leu Tyr Gly Tyr Trp Ser Gly Asn Gly Tyr Glu  
 35 40 45  
 Leu Leu Asn Asn Leu Trp Gly Lys Asp Thr Ala Thr Ser Gly Trp Gln

50		55		60	
Cys Thr Tyr Leu Asp Gly	Thr Asn Asn Gly Gly	Ile Gln Trp Ser Thr			
65	70	75		80	
Ala Trp Glu Trp Gln Gly	Ala Pro Asp Asn Val Lys Ser Tyr Pro Tyr				
	85	90		95	
Val Gly Lys Gln Ile Gln Arg Gly Arg	Lys Ile Ser Asp Ile Asn Ser				
	100	105		110	
Met Arg Thr Ser Val Ser Trp Thr Tyr Asp Arg Thr Asp	Ile Arg Ala				
	115	120		125	
Asn Val Ala Tyr Asp Val Phe Thr Ala Arg Asp Pro Asp His Pro Asn					
	130	135		140	
Trp Gly Gly Asp Tyr Glu Leu Met Ile Trp Leu Ala Arg Tyr Gly Gly					
145	150	155		160	
Ile Tyr Pro Ile Gly Thr Phe His Ser Gln Val Asn Leu Ala Gly Arg					
	165	170		175	
Thr Trp Asp Leu Trp Thr Gly Tyr Asn Gly Asn Met Arg Val Tyr Ser					
	180	185		190	
Phe Leu Pro Pro Ser Gly Asp Ile Arg Asp Phe Ser Cys Asp Ile Lys					
	195	200		205	
Asp Phe Phe Asn Tyr Leu Glu Arg Asn His Gly Tyr Pro Ala Arg Glu					
	210	215		220	
Gln Asn Leu Ile Val Tyr Gln Val Gly Thr Glu Cys Phe Thr Gly Gly					
225	230	235		240	
Pro Ala Arg Phe Thr Cys Arg Asp Phe Arg Ala Asp Leu Trp					
	245	250			

<210> 16  
 <211> 247  
 <212> PRT  
 <213> Chaetomium brasiliense

<400> 16	
Met Lys Leu Thr Leu Val Leu Phe Val Ser Ser Leu Ala Ala Ala Thr	
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Pro Leu Gly Trp Arg Glu Arg Gln Gln Val Ser Leu Cys Gly Gln	
	10
	15
	20
Ser Ser Ser Trp Ser Gly Asn Gly Tyr Gln Leu Asn Asn Asn Leu Trp	
	25
	30
	35
Gly Gln Ser Arg Ala Thr Ser Gly Ser Gln Cys Thr Tyr Leu Asp Ser	
	40
	45
	50
Ser Ser Asn Ser Gly Ile His Trp His Thr Thr Trp Thr Trp Glu Gly	
	55
	60
	65
Gly Glu Gly Glu Val Lys Ser Tyr Ala Tyr Ser Gly Arg Gln Val Ser	
	70
	75
	80
	85
Thr Gly Leu Thr Ile Ala Ser Ile Asp Ser Met Gln Thr Ser Val Ser	
	90
	95
	100
Trp Glu Tyr Asn Thr Thr Asp Ile Gln Ala Asn Val Ala Tyr Asp Ile	
	105
	110
	115
Phe Thr Ala Glu Asp Pro Asp His Glu His Ser Ser Gly Asp Tyr Glu	
	120
	125
	130
Leu Met Ile Trp Leu Ala Arg Tyr Asn Asn Val Ser Pro Ile Gly Ser	
	135
	140
	145
Ser Val Ala Thr Ala Thr Val Gly Gly Asp Thr Trp Asp Leu Phe Ala	
	150
	155
	160
	165
Gly Ala Asn Gly Asp Met Glu Val Tyr Ser Phe Val Ala Glu Asn Thr	
	170
	175
	180
Met Asn Ser Phe Ser Gly Asp Val Lys Asp Phe Phe Asp Tyr Leu Glu	
	185
	190
	195
Gln Asn Val Gly Phe Pro Val Asp Asp Gln Tyr Leu Leu Val Phe Glu	
	200
	205
	210
Leu Gly Ser Glu Ala Phe Thr Gly Gly Pro Ala Thr Leu Ser Val Ser	
	215
	220

225                      230  
Gln Phe Ser Ala Asn Ile Ala  
                         245

235                      240

<210> 17  
<211> 238  
<212> PRT  
<213> Fusarium equseti

<400> 17  
Met Lys Ser Thr Leu Leu Leu Ala Gly Ala Phe Ala Pro Leu Ala Phe  
1                      5                      10                      15  
Ala Lys Asp Leu Cys Glu Gln Tyr Gly Tyr Leu Ser Ser Asp Gly Tyr  
                         20                      25                      30  
Ser Leu Asn Asn Asn Val Trp Gly Lys Asp Ser Gly Thr Gly Asp Gln  
                         35                      40                      45  
Cys Thr His Val Asn Trp Asn Asn Ala Asn Gly Ala Gly Trp Asp Val  
                         50                      55                      60  
Glu Trp Asn Trp Ser Gly Gly Lys Asp Asn Val Lys Ser Tyr Pro Asn  
65                      70                      75                      80  
Ser Ala Leu Leu Ile Gly Glu Asp Lys Lys Thr Ile Ser Ser Ile Thr  
                         85                      90                      95  
Asn Met Gln Ser Thr Ala Glu Trp Lys Tyr Ser Gly Asp Asn Leu Arg  
                         100                      105                      110  
Ala Asp Val Ala Tyr Asp Leu Phe Thr Ala Ala Asp Pro Asn His Glu  
                         115                      120                      125  
Thr Ser Ser Gly Glu Tyr Glu Leu Met Val Trp Leu Ala Arg Ile Gly  
                         130                      135                      140  
Gly Val Gln Pro Ile Gly Ser Leu Gln Thr Ser Val Thr Ile Glu Gly  
145                      150                      155                      160  
His Thr Trp Glu Leu Trp Val Gly Met Asn Gly Ser Met Lys Val Phe  
                         165                      170                      175  
Ser Phe Val Ala Pro Thr Pro Val Asn Asn Phe Asn Ala Asp Ile Lys  
                         180                      185                      190  
Gln Phe Trp Asp Tyr Leu Thr Lys Ser Gln Asn Phe Pro Ala Asp Asn  
                         195                      200                      205  
Gln Tyr Leu Leu Thr Phe Gln Phe Gly Thr Glu Pro Phe Thr Gly Asp  
                         210                      215                      220  
Asn Ala Lys Phe Thr Val Thr Asn Phe Asn Ala His Leu Lys  
225                      230                      235

<210> 18  
<211> 244  
<212> PRT  
<213> Fusarium javanicum (1)

<400> 18  
Met Lys Ser Ala Ile Val Ala Ala Leu Ala Gly Leu Ala Ala Ala Ser  
1                      5                      10                      15  
Pro Thr Arg Leu Ile Pro Arg Gly Gln Phe Cys Gly Gln Trp Asp Ser  
                         20                      25                      30  
Glu Thr Ala Gly Ala Tyr Thr Ile Tyr Asn Asn Leu Trp Gly Lys Asp  
                         35                      40                      45  
Asn Ala Glu Ser Gly Glu Gln Cys Thr Thr Asn Ser Gly Glu Gln Ser  
                         50                      55                      60  
Asp Gly Ser Ile Ala Trp Ser Val Glu Trp Ser Trp Thr Gly Gly Gln  
65                      70                      75                      80  
Gly Gln Val Lys Ser Tyr Pro Asn Ala Val Val Glu Ile Glu Lys Lys  
                         85                      90                      95  
Thr Leu Gly Glu Val Ser Ser Ile Pro Ser Ala Trp Asp Trp Thr Tyr  
                         100                      105                      110

Thr Gly Asn Gly Ile Ile Ala Asn Val Ala Tyr Asp Leu Phe Thr Ser  
 115 120 125  
 Ser Thr Glu Ser Gly Asp Ala Glu Tyr Glu Phe Met Ile Trp Leu Ser  
 130 135 140  
 Ala Leu Gly Gly Ala Gly Pro Ile Ser Asn Asp Gly Ser Pro Val Ala  
 145 150 155 160  
 Thr Ala Glu Leu Ala Gly Thr Ser Trp Lys Leu Tyr Gln Gly Lys Asn  
 165 170 175  
 Asn Gln Met Thr Val Phe Ser Phe Val Ala Glu Ser Asp Val Asn Asn  
 180 185 190  
 Phe Cys Gly Asp Leu Ala Asp Phe Thr Asp Tyr Leu Val Asp Asn His  
 195 200 205  
 Gly Val Ser Ser Ser Gln Ile Leu Gln Ser Val Gly Ala Gly Thr Glu  
 210 215 220  
 Pro Phe Glu Gly Thr Asn Ala Val Phe Thr Thr Asn Asn Tyr His Ala  
 225 230 235 240  
 Asp Val Glu Tyr

<210> 19  
 <211> 250  
 <212> PRT  
 <213> Fusarium javanicum (2)

<400> 19  
 Met Lys Phe Phe Gly Val Val Ser Ala Ser Leu Ala Ala Thr Ala Val  
 1 5 10 15  
 Ala Thr Pro Thr Thr Pro Thr Glu Thr Ile Glu Lys Arg Asp Thr Thr  
 20 25 30  
 Trp Cys Asp Ala Phe Gly Ser Leu Ala Thr Ser Gly Tyr Thr Val Tyr  
 35 40 45  
 His Asn Asn Trp Gly Lys Gly Asp Ala Thr Ser Gly Ser Gln Cys Thr  
 50 55 60  
 Thr Phe Thr Ser Val Ser Asn Asn Asn Phe Val Trp Ser Thr Ser Trp  
 65 70 75 80  
 Thr Trp Ala Gly Gly Ala Gly Lys Val Lys Ser Tyr Ser Asn Val Ala  
 85 90 95  
 Leu Glu Lys Ile Asn Lys Lys Ile Ser Asp Ile Lys Ser Val Ser Thr  
 100 105 110  
 Arg Trp Ile Trp Arg Tyr Thr Gly Thr Lys Met Ile Ala Asn Val Ser  
 115 120 125  
 Tyr Asp Leu Trp Phe Ala Pro Thr Ala Ser Ser Asn Asn Ala Tyr Glu  
 130 135 140  
 Ile Met Ile Trp Val Gly Ala Tyr Gly Gly Ala Leu Pro Ile Ser Thr  
 145 150 155 160  
 Pro Gly Lys Gly Val Ile Asp Arg Pro Thr Leu Ala Gly Ile Pro Trp  
 165 170 175  
 Asp Val Tyr Lys Gly Pro Asn Gly Asp Val Thr Val Ile Ser Phe Val  
 180 185 190  
 Ala Ser Ser Asn Gln Gly Asn Phe Gln Ala Asp Leu Lys Glu Phe Leu  
 195 200 205  
 Asn Tyr Leu Thr Ser Lys Gln Gly Leu Pro Ser Asn Tyr Val Ala Thr  
 210 215 220  
 Ser Phe Gln Ala Gly Thr Glu Pro Phe Glu Gly Thr Asn Ala Val Leu  
 225 230 235 240  
 Lys Thr Ser Ala Tyr Thr Ile Ser Val Asn  
 245 250

<210> 20  
 <211> 238  
 <212> PRT

<213> Gliocladium roseum (1)

<400> 20

Met Lys Ala Asn Ile Val Ile Leu Ser Leu Phe Ala Pro Leu Ala Ala  
1 5 10 15  
Val Ala Gln Thr Leu Cys Gly Gln Tyr Ser Ser Asn Thr Gln Gly Gly  
20 25 30  
Tyr Ile Phe Asn Asn Asn Met Trp Gly Met Gly Ser Gly Ser Gly Ser  
35 40 45  
Gln Cys Thr Tyr Val Asp Lys Val Trp Ala Glu Gly Val Ala Trp His  
50 55 60  
Thr Asp Trp Ser Trp Ser Gly Gly Asp Asn Asn Val Lys Ser Tyr Pro  
65 70 75 80  
Tyr Ser Gly Arg Glu Leu Gly Thr Lys Arg Ile Val Ser Ser Ile Lys  
85 90 95  
Ser Ile Ser Ser Gly Ala Asp Trp Asp Tyr Thr Gly Ser Asn Leu Arg  
100 105 110  
Ala Asn Ala Ala Tyr Asp Ile Phe Thr Ser Ala Asn Pro Asn His Ala  
115 120 125  
Thr Ser Ser Gly Asp Tyr Glu Val Met Ile Trp Leu Ala Asn Leu Gly  
130 135 140  
Gly Leu Thr Pro Ile Gly Ser Pro Ile Gly Thr Val Lys Ala Ala Gly  
145 150 155 160  
Arg Asp Trp Glu Leu Trp Asp Gly Tyr Asn Gly Ala Met Arg Val Tyr  
165 170 175  
Ser Phe Val Ala Pro Ser Gln Leu Asn Ser Phe Asp Gly Glu Ile Met  
180 185 190  
Asp Phe Phe Tyr Val Val Lys Asp Met Arg Gly Phe Pro Ala Asp Ser  
195 200 205  
Gln His Leu Leu Thr Val Gln Phe Gly Thr Glu Pro Ile Ser Gly Ser  
210 215 220  
Gly Ala Lys Phe Ser Val Ser His Trp Ser Ala Lys Leu Gly  
225 230 235

<210> 21

<211> 348

<212> PRT

<213> Gliocladium roseum (2)

<400> 21

Met Lys Ser Ile Ile Ser Phe Phe Gly Leu Ala Thr Leu Val Ala Ala  
1 5 10 15  
Ala Pro Ser Gln Asn Pro Thr Arg Thr Gln Pro Leu Glu Lys Arg Ala  
20 25 30  
Thr Thr Leu Cys Gly Gln Trp Asp Ser Val Glu Thr Gly Gly Tyr Thr  
35 40 45  
Ile Tyr Asn Asn Leu Trp Gly Gln Asp Asn Gly Ser Gly Ser Gln Cys  
50 55 60  
Leu Thr Val Glu Gly Val Thr Asp Gly Leu Ala Ala Trp Ser Ser Thr  
65 70 75 80  
Trp Ser Trp Ser Gly Gly Ser Ser Ser Val Lys Ser Tyr Ser Asn Ala  
85 90 95  
Val Leu Ser Ala Glu Ala Ala Arg Ile Ser Ala Ile Ser Ser Ile Pro  
100 105 110  
Ser Lys Trp Glu Trp Ser Tyr Thr Gly Thr Asp Ile Val Ala Asn Val  
115 120 125  
Ala Tyr Asp Leu Phe Ser Asn Thr Asp Cys Gly Asp Thr Pro Glu Tyr  
130 135 140  
Glu Ile Met Ile Trp Leu Ser Ala Leu Gly Gly Ala Gly Pro Ile Ser  
145 150 155 160  
Ser Thr Gly Ser Ser Ile Ala Thr Val Thr Ile Ala Gly Ala Ser Trp

				165					170				175		
Asn	Leu	Trp	Gln	Gly	Gln	Asn	Asn	Gln	Met	Ala	Val	Phe	Ser	Phe	Val
			180					185					190		
Ala	Glu	Ser	Asp	Gln	Lys	Ser	Phe	Ser	Gly	Asp	Leu	Asn	Asp	Phe	Ile
		195						200					205		
Gln	Tyr	Leu	Val	Asp	Ser	Gln	Gly	Tyr	Ser	Gly	Ser	Gln	Cys	Leu	Tyr
	210					215					220				
Ser	Ile	Gly	Ala	Gly	Thr	Glu	Pro	Phe	Thr	Gly	Thr	Asp	Ala	Glu	Phe
225					230					235				240	
Ile	Thr	Thr	Gly	Tyr	Ser	Val	Ser	Val	Ser	Ala	Gly	Asp	Ser	Gly	Cys
			245						250					255	
Asp	Glu	Thr	Thr	Thr	Ser	Ser	Gln	Ala	Gln	Ser	Ser	Thr	Val	Glu	Thr
		260						265					270		
Ser	Thr	Ala	Thr	Gln	Pro	Gln	Ser	Ser	Ser	Thr	Val	Val	Pro	Thr	Val
		275					280					285			
Thr	Leu	Ser	Gln	Pro	Ser	Asn	Glu	Ser	Thr	Thr	Thr	Pro	Val	Gln	Ser
	290					295					300				
Gln	Pro	Ser	Ser	Val	Glu	Thr	Thr	Pro	Thr	Ala	Gln	Pro	Gln	Ser	Ser
305				310						315				320	
Ser	Val	Gln	Thr	Thr	Thr	Ala	Gln	Ala	Gln	Pro	Thr	Ser	Gly	Thr	
			325				330						335		
Gly	Cys	Ser	Arg	Arg	Arg	Lys	Arg	Arg	Ala	Val	Val				
		340					345								

<210> 22  
 <211> 236  
 <212> PRT  
 <213> Gliocladium roseum (3)

<400> 22

Met	Lys	Phe	Gln	Leu	Leu	Ser	Leu	Thr	Ala	Phe	Ala	Pro	Leu	Ser	Leu
1				5					10					15	
Ala	Ala	Leu	Cys	Gly	Gln	Tyr	Gln	Ser	Gln	Ser	Gln	Gly	Gly	Tyr	Ile
			20					25					30		
Phe	Asn	Asn	Asn	Lys	Trp	Gly	Gln	Gly	Ser	Gly	Ser	Gly	Ser	Gln	Cys
	35					40						45			
Leu	Thr	Ile	Asp	Lys	Thr	Trp	Asp	Ser	Asn	Val	Ala	Phe	His	Ala	Asp
	50				55					60					
Trp	Ser	Trp	Ser	Gly	Gly	Thr	Asn	Asn	Val	Lys	Ser	Tyr	Pro	Asn	Ala
65				70					75					80	
Gly	Leu	Glu	Phe	Ser	Arg	Gly	Lys	Lys	Val	Ser	Ser	Ile	Gly	Thr	Ile
			85						90				95		
Asn	Gly	Gly	Ala	Asp	Trp	Asp	Tyr	Ser	Gly	Ser	Asn	Ile	Arg	Ala	Asn
		100						105					110		
Val	Ala	Tyr	Gly	Ile	Phe	Thr	Ser	Ala	Asp	Pro	Asn	His	Val	Thr	Ser
		115					120					125			
Ser	Gly	Asp	Tyr	Glu	Leu	Met	Ile	Trp	Leu	Gly	Lys	Leu	Gly	Asp	Ile
	130					135					140				
Tyr	Pro	Ile	Gly	Asn	Ser	Ile	Gly	Arg	Val	Glu	Ala	Ala	Asn	Arg	Glu
145				150					155					160	
Trp	Asp	Phe	Leu	Val	Gly	Tyr	Asn	Gly	Ala	Met	Lys	Val	Phe	Ser	Phe
			165						170					175	
Val	Ala	Pro	Ser	Pro	Val	Thr	Leu	Phe	Asp	Gly	Asn	Ile	Met	Asp	Phe
		180						185					190		
Phe	Tyr	Val	Met	Arg	Asp	Met	Gln	Gly	Tyr	Pro	Met	Asp	Lys	Gln	Tyr
	195						200					205			
Leu	Leu	Ser	Leu	Gln	Phe	Gly	Thr	Glu	Pro	Phe	Thr	Gly	Ser	Asn	Ala
	210					215					220				
Asn	Phe	Ser	Cys	Trp	Tyr	Phe	Gly	Ala	Lys	Ile	Lys				
225					230					235					

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 cont

<210> 23  
 <211> 237  
 <212> PRT  
 <213> Gliocladium roseum (4)

<400> 23  
 Met Lys Thr Gly Ile Ala Tyr Leu Ala Ala Val Leu Pro Leu Ala Met  
 1 5 10 15  
 Ala Glu Ser Leu Cys Asp Gln Tyr Ala Tyr Leu Ser Arg Asp Gly Tyr  
 20 25 30  
 Asn Phe Asn Asn Asn Glu Trp Gly Ala Ala Thr Gly Thr Gly Asp Gln  
 35 40 45  
 Cys Thr Tyr Val Asp Ser Thr Ser Ser Gly Gly Val Ser Trp His Ser  
 50 55 60  
 Asp Trp Thr Trp Ser Gly Ser Glu Ser Glu Ile Lys Ser Tyr Pro Tyr  
 65 70 75 80  
 Ser Gly Leu Asp Leu Pro Glu Lys Lys Ile Val Thr Ser Ile Gly Ser  
 85 90 95  
 Ile Ser Thr Gly Ala Glu Trp Ser Tyr Ser Gly Ser Asp Ile Arg Ala  
 100 105 110  
 Asp Val Ala Tyr Asp Thr Phe Thr Ala Ala Asp Pro Asn His Ala Thr  
 115 120 125  
 Ser Ser Gly Asp Tyr Glu Val Met Ile Trp Leu Ala Asn Leu Gly Gly  
 130 135 140  
 Leu Thr Pro Ile Gly Ser Pro Ile Gly Thr Val Lys Ala Ala Gly Arg  
 145 150 155 160  
 Asp Trp Glu Leu Trp Asp Gly Tyr Asn Gly Ala Met Arg Val Tyr Ser  
 165 170 175  
 Phe Val Ala Pro Ser Gln Leu Asn Ser Phe Asp Gly Glu Ile Met Asp  
 180 185 190  
 Phe Phe Tyr Val Val Lys Asp Met Arg Gly Phe Pro Ala Asp Ser Gln  
 195 200 205  
 His Leu Leu Thr Val Gln Phe Gly Thr Glu Pro Ile Ser Gly Ser Gly  
 210 215 220  
 Ala Lys Phe Ser Val Ser His Trp Ser Ala Lys Leu Gly  
 225 230 235

<210> 24  
 <211> 237  
 <212> PRT  
 <213> Memnoniella echinata

<400> 24  
 Met Lys Val Ala Ala Leu Leu Val Ala Leu Ser Pro Leu Ala Phe Ala  
 1 5 10 15  
 Gln Ser Leu Cys Asp Gln Tyr Ser Tyr Tyr Ser Ser Asn Gly Tyr Glu  
 20 25 30  
 Phe Asn Asn Asn Met Trp Gly Arg Asn Ser Gly Gln Gly Asn Gln Cys  
 35 40 45  
 Thr Tyr Val Asp Tyr Ser Ser Pro Asn Gly Val Gly Trp Arg Val Asn  
 50 55 60  
 Trp Asn Trp Ser Gly Gly Asp Asn Asn Val Lys Ser Tyr Pro Tyr Ser  
 65 70 75 80  
 Gly Arg Gln Leu Pro Thr Lys Arg Ile Val Ser Trp Ile Gly Ser Leu  
 85 90 95  
 Pro Thr Thr Val Ser Trp Asn Tyr Gln Gly Asn Asn Leu Arg Ala Asn  
 100 105 110  
 Val Ala Tyr Asp Leu Phe Thr Ala Ala Asn Pro Asn His Pro Asn Ser  
 115 120 125  
 Ser Gly Asp Tyr Glu Leu Met Ile Trp Leu Gly Arg Leu Gly Asn Val  
 130 135 140

Tyr Pro Ile Gly Asn Gln Val Ala Thr Val Asn Ile Ala Gly Gln Gln  
 145 150 155 160  
 Trp Asn Leu Tyr Tyr Gly Tyr Asn Gly Ala Met Gln Val Tyr Ser Phe  
 165 170 175  
 Val Ser Pro Asn Gln Leu Asn Tyr Phe Ser Gly Asn Val Lys Asp Phe  
 180 185 190  
 Phe Thr Tyr Leu Gln Tyr Asn Arg Ala Tyr Pro Ala Asp Ser Gln Tyr  
 195 200 205  
 Leu Ile Thr Tyr Gln Phe Gly Thr Glu Pro Phe Thr Gly Gln Asn Ala  
 210 215 220  
 Val Phe Thr Val Ser Asn Trp Ser Ala Gln Gln Asn Asn  
 225 230 235

<210> 25  
 <211> 245  
 <212> PRT  
 <213> Emericella desertoru

<400> 25  
 Met Lys Leu Leu Ala Leu Ser Leu Val Ser Leu Ala Ser Ala Ala Ser  
 1 5 10 15  
 Ala Ala Ser Ile Leu Ser Asn Thr Phe Thr Arg Arg Ser Asp Phe Cys  
 20 25 30  
 Gly Gln Trp Asp Thr Ala Thr Val Gly Asn Phe Ile Val Tyr Asn Asn  
 35 40 45  
 Leu Trp Gly Gln Asp Asn Ala Asp Ser Gly Ser Gln Thr Gly Val Asp  
 50 55 60  
 Ser Ala Asn Gly Asn Ser Ile Ser Trp His Thr Thr Trp Ser Trp Ser  
 65 70 75 80  
 Gly Gly Ser Ser Ser Val Lys Ser Tyr Ala Asn Ala Ala Tyr Gln Phe  
 85 90 95  
 Thr Ser Thr Lys Leu Asn Ser Leu Ser Ser Ile Pro Thr Ser Trp Lys  
 100 105 110  
 Trp Gln Tyr Ser Thr Thr Asp Ile Val Ala Asn Val Ala Tyr Asp Leu  
 115 120 125  
 Phe Thr Ser Ser Ser Ala Gly Gly Asp Ser Glu Tyr Glu Ile Met Ile  
 130 135 140  
 Trp Leu Ala Ala Leu Gly Gly Ala Gly Pro Ile Ser Ser Thr Gly Ser  
 145 150 155 160  
 Ser Ile Ala Thr Val Thr Leu Gly Gly Val Thr Trp Ser Leu Tyr Ser  
 165 170 175  
 Gly Pro Asn Gly Ser Met Gln Val Tyr Ser Phe Val Ala Ser Ser Thr  
 180 185 190  
 Thr Glu Ser Phe Ser Ala Asp Leu Met Asp Phe Ile Asn Tyr Leu Ala  
 195 200 205  
 Glu Asn Gln Gly Leu Ser Ser Ser Gln Leu Thr His Val Gln Ala Gly  
 210 215 220  
 Thr Glu Pro Phe Thr Gly Thr Asp Ala Thr Leu Thr Val Ser Ser Tyr  
 225 230 235 240  
 Ser Val Ser Val Ser  
 245

<210> 26  
 <211> 371  
 <212> PRT  
 <213> Actinomycete sp. 11AG8

<400> 26  
 Met Arg Ser His Pro Arg Ser Ala Thr Met Thr Val Leu Val Val Leu  
 1 5 10 15  
 Ala Ser Leu Gly Ala Leu Leu Thr Ala Ala Ala Pro Ala Gln Ala Asn

a  
cont

<400> 27																
Met	Arg	Thr	Leu	Arg	Pro	Gln	Ala	Arg	Ala	Pro	Arg	Gly	Leu	Leu	Ala	
1				5					10					15		
Ala	Leu	Gly	Ala	Val	Leu	Ala	Ala	Phe	Ala	Leu	Val	Ser	Ser	Leu	Val	
			20					25					30			
Thr	Ala	Ala	Ala	Pro	Ala	Gln	Ala	Asp	Thr	Thr	Ile	Cys	Glu	Pro	Phe	
		35					40					45				
Gly	Thr	Thr	Thr	Ile	Gln	Gly	Arg	Tyr	Val	Val	Gln	Asn	Asn	Arg	Trp	
	50					55					60					
Gly	Ser	Thr	Ala	Pro	Gln	Cys	Val	Thr	Ala	Thr	Asp	Thr	Gly	Phe	Arg	

65	70	75	80
Val Thr Gln Ala Asp Gly Ser Ala Pro Thr Asn Gly Ala Pro Lys Ser			
	85	90	95
Tyr Pro Ser Val Phe Asn Gly Cys His Tyr Thr Asn Cys Ser Pro Gly			
	100	105	110
Thr Asp Leu Pro Val Arg Leu Asp Thr Val Ser Ala Ala Pro Ser Ser			
	115	120	125
Ile Ser Tyr Gly Phe Val Asp Gly Ala Val Tyr Asn Ala Ser Tyr Asp			
	130	135	140
Ile Trp Leu Asp Pro Thr Ala Arg Thr Asp Gly Val Asn Gln Thr Glu			
145	150	155	160
Ile Met Ile Trp Phe Asn Arg Val Gly Pro Ile Gln Pro Ile Gly Ser			
	165	170	175
Pro Val Gly Thr Ala Ser Val Gly Gly Arg Thr Trp Glu Val Trp Ser			
	180	185	190
Gly Gly Asn Gly Ser Asn Asp Val Leu Ser Phe Val Ala Pro Ser Ala			
	195	200	205
Ile Ser Gly Trp Ser Phe Asp Val Met Asp Phe Val Arg Ala Thr Val			
	210	215	220
Ala Arg Gly Leu Ala Glu Asn Asp Trp Tyr Leu Thr Ser Val Gln Ala			
225	230	235	240
Gly Phe Glu Pro Trp Gln Asn Gly Ala Gly Leu Ala Val Asn Ser Phe			
	245	250	255
Ser Ser Thr Val Glu Thr Gly Thr Pro Gly Gly Thr Asp Pro Gly Asp			
	260	265	270
Pro Gly Gly Pro Ser Ala Cys Ala Val Ser Tyr Gly Thr Asn Val Trp			
	275	280	285
Gln Asp Gly Phe Thr Ala Asp Val Thr Val Thr Asn Thr Gly Thr Ala			
	290	295	300
Pro Val Asp Gly Trp Gln Leu Ala Phe Thr Leu Pro Ser Gly Gln Arg			
305	310	315	320
Ile Thr Asn Ala Trp Asn Ala Ser Leu Thr Pro Ser Ser Gly Ser Val			
	325	330	335
Thr Ala Thr Gly Ala Ser His Asn Ala Arg Ile Ala Pro Gly Gly Ser			
	340	345	350
Leu Ser Phe Gly Phe Gln Gly Thr Tyr Gly Gly Ala Phe Ala Glu Pro			
	355	360	365
Thr Gly Phe Arg Leu Asn Gly Thr Ala Cys Thr Thr Val			
	370	375	380

<210> 28  
 <211> 260  
 <212> PRT  
 <213> Rhodothermus marinus

<400> 28  
 Met Asn Val Met Arg Ala Val Leu Val Leu Ser Leu Leu Leu Leu Phe  
 1 5 10 15  
 Gly Cys Asp Trp Leu Phe Pro Asp Gly Asp Asn Gly Lys Glu Pro Glu  
 20 25 30  
 Pro Glu Pro Glu Pro Thr Val Glu Leu Cys Gly Arg Trp Asp Ala Arg  
 35 40 45  
 Asp Val Ala Gly Gly Arg Tyr Arg Val Ile Asn Asn Val Trp Gly Ala  
 50 55 60  
 Glu Thr Ala Gln Cys Ile Glu Val Gly Leu Glu Thr Gly Asn Phe Thr  
 65 70 75 80  
 Ile Thr Arg Ala Asp His Asp Asn Gly Asn Asn Val Ala Ala Tyr Pro  
 85 90 95  
 Ala Ile Tyr Phe Gly Cys His Trp Ala Pro Ala Arg Ala Ile Arg Asp  
 100 105 110  
 Cys Ala Ala Arg Ala Gly Ala Val Arg Arg Ala His Glu Leu Asp Val

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<210> 29
<211> 264
<212> PRT
<213> Erwinia carotovara
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cont

<210> 30  
<211> 14  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<221> misc\_feature  
<222> 9  
<223> n = A,T,C or G

<400> 30  
aayaayytnt gggg

14

<210> 31  
<211> 14  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<221> misc\_feature  
<222> 9  
<223> n = A,T,C or G

<400> 31  
caraayytnt gggg

14

<210> 32  
<211> 17  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<221> misc\_feature  
<222> 12  
<223> n = inosine

<400> 32  
aayaayaayh wntgggg

17

<210> 33  
<211> 15  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<221> misc\_feature  
<222> 6  
<223> n = A,T,C or G

<400> 33  
garytnatga thtgg

15

<210> 34

<211> 15  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<221> misc\_feature  
<222> 10  
<223> n = A,T,C or G

<400> 34  
ccadatcatn arytc

15

<210> 35  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<221> misc\_feature  
<222> 9  
<223> n = inosine

<400> 35  
taygarytna tgathtgg

18

<210> 36  
<211> 18  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<221> misc\_feature  
<222> 10  
<223> n = inosine

<400> 36  
ccadatcatn arytcrt

18

<210> 37  
<211> 17  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<221> misc\_feature  
<222> 6  
<223> n = A,T,C or G

<400> 37  
gtraanggyt crgtrcc

17

<210> 38  
<211> 17

<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<221> misc\_feature  
<222> 6  
<223> n = A,T,C or G

<400> 38  
gtraanggyt crgtycc

17

<210> 39  
<211> 17  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<221> misc\_feature  
<222> 6  
<223> n = A,T,C or G

<400> 39  
gtraanggyt cygtrcc

17

<210> 40  
<211> 17  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<221> misc\_feature  
<222> 6  
<223> n = A,T,C or G

<400> 40  
gtraanggyt cygtycc

17

<210> 41  
<211> 17  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> primer

<221> misc\_feature  
<222> 12, 15  
<223> n = A,T,C or G

<400> 41  
gtraarcayt cngtncc

17

<210> 42  
<211> 5  
<212> PRT

a!  
cont

<213> Artificial Sequence

<220>

<223> synthetic

<221> VARIANT

<222> 1

<223> Xaa = Ser, Tyr, Cys, Trp, Thr, Asn, Lys, or Arg

<221> VARIANT

<222> 2

<223> Xaa = Val or Pro

<221> VARIANT

<222> 3

<223> Xaa = Lys or Ala

<221> VARIANT

<222> 4

<223> Xaa = Ser or Ala

<221> VARIANT

<222> 5

<223> Xaa = Tyr or Phe

<400> 42

Xaa Xaa Xaa Xaa Xaa

1

5

<210> 43

<211> 102

<212> PRT

<213> Trichoderma reesei

<400> 43

Asn Asn Leu Trp Gly Ala Ser Ala Gly Ser Gly Phe Gly Cys Val Thr  
1 5 10 15  
Ala Val Ser Leu Ser Gly Gly Ala Ser Trp His Ala Asp Trp Gln Trp  
20 25 30  
Ser Gly Gly Gln Asn Asn Val Lys Ser Tyr Gln Asn Ser Gln Ile Ala  
35 40 45  
Ile Pro Gln Lys Arg Thr Val Asn Ser Ile Ser Ser Met Pro Thr Thr  
50 55 60  
Ala Ser Trp Ser Tyr Ser Gly Ser Asn Ile Arg Ala Asn Val Ala Tyr  
65 70 75 80  
Asp Leu Phe Thr Ala Ala Asn Pro Asn His Val Thr Tyr Ser Gly Asp  
85 90 95  
Tyr Glu Leu Met Ile Trp  
100

<210> 44

<211> 104

<212> PRT

<213> Fusarium equiseti

<400> 44

Asn Asn Phe Trp Gly Lys Asp Ser Gly Thr Gly Asp Gln Cys Thr His  
1 5 10 15  
Val Asn Trp Asn Asn Ala Asn Gly Ala Gly Trp Asp Val Glu Trp Asn  
20 25 30  
Trp Ser Gly Gly Lys Asp Asn Val Lys Ser Tyr Pro Asn Ser Ala Leu

35 40 45  
 Leu Ile Gly Glu Asp Lys Lys Thr Ile Ser Ser Ile Thr Asn Met Gln  
 50 55 60  
 Ser Thr Ala Glu Trp Lys Tyr Ser Gly Asp Asn Leu Arg Ala Asp Val  
 65 70 75 80  
 Ala Tyr Asp Leu Phe Thr Ala Ala Asp Pro Asn His Glu Thr Ser Ser  
 85 90 95  
 Gly Glu Tyr Glu Leu Met Ile Trp  
 100

<210> 45  
 <211> 103  
 <212> PRT  
 <213> Gliocladium roseum

<400> 45  
 Asn Asn Lys Trp Gly Gln Gly Ser Gly Ser Gly Ser Gln Cys Leu Thr  
 1 5 10 15  
 Ile Asp Lys Thr Trp Asp Ser Asn Val Ala Phe His Ala Asp Trp Ser  
 20 25 30  
 Trp Ser Gly Gly Thr Asn Asn Val Lys Ser Tyr Pro Lys Arg Arg Ser  
 35 40 45  
 Glu Phe Ser Arg Gly Lys Lys Val Ser Ser Ile Gly Thr Ile Asn Gly  
 50 55 60  
 Gly Ala Asp Trp Asp Tyr Ser Gly Ser Asn Ile Arg Ala Asn Val Ala  
 65 70 75 80  
 Tyr Gly Ile Phe Thr Ser Ala Asp Pro Asn His Val Thr Ser Ser Gly  
 85 90 95  
 Asp Tyr Glu Leu Met Ile Trp  
 100

<210> 46  
 <211> 89  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> hypothetical Acremonium brachypenium peptide  
 without intron

a!  
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 <400> 46  
 Trp Gly Pro Arg Ser Ala Glu Ser Gly Glu Gln Cys Thr Thr Asn Asn  
 1 5 10 15  
 Gly Leu Ser Asp Asp Gly Thr Leu Ser Trp Ser Val Glu Trp Thr Trp  
 20 25 30  
 Val Gly Ala Pro Ser Ser Val Lys Ser Tyr Pro Asn Val Phe Val Glu  
 35 40 45  
 Ala Glu Pro Arg Pro Leu Ser Glu Val Ser Ser Ile Gln Ala Glu Trp  
 50 55 60  
 Ala Trp Thr Tyr Ser Gly Ala Gly Asp Phe Thr Thr Asn Val Ala Phe  
 65 70 75 80  
 Asp Ile Phe Thr Gly Glu Thr Ala Asp  
 85

<210> 47  
 <211> 102  
 <212> PRT  
 <213> Aspergillus kawachii (1)

<400> 47  
 Gln Asn Leu Trp Gly Glu Tyr Gln Gly Thr Gly Ser Gln Cys Val Tyr

1	5	10	15
Val Asp Lys	Leu Ser Ser Ser Gly	Ala Ser Trp His Thr	Lys Trp Thr
	20	25	30
Trp Ser Gly	Gly Glu Gly Thr	Val Lys Ser Tyr Ser	Asn Ser Gly Leu
	35	40	45
Thr Phe Asp	Lys Lys Leu Val	Ser Asp Val Ser Ser	Ile Pro Thr Ser
	50	55	60
Val Thr Trp	Ser Gln Asp Asp Thr	Asn Val Gln Ala Asp	Val Ser Tyr
65	70	75	80
Asp Leu Phe	Thr Ala Ala Asn Ala	Asp His Ala Thr Ser	Ser Gly Asp
	85	90	95
Tyr Glu Leu	Met Ile Trp		
	100		

<210> 48  
 <211> 102  
 <212> PRT  
 <213> *Aspergillus aculeatus*

<400> 48
Asn Asn Leu Trp Gly Lys Asp Ala Gly Ser Gly Ser Gln Cys Thr Thr
1 5 10 15
Val Asn Ser Ala Ser Ser Ala Gly Thr Ser Trp Ser Thr Lys Trp Asn
20 25 30
Trp Ser Gly Gly Glu Asn Ser Val Lys Ser Tyr Ala Asn Ser Gly Leu
35 40 45
Thr Phe Asn Lys Lys Leu Val Ser Gln Ile Ser Gln Ile Pro Thr Thr
50 55 60
Ala Arg Trp Ser Tyr Asp Asn Thr Gly Ile Arg Ala Asp Val Ala Tyr
65 70 75 80
Asp Leu Phe Thr Ala Ala Asp Ile Asn His Val Thr Trp Ser Gly Asp
85 90 95
Tyr Glu Leu Met Ile Trp
100

<210> 49  
 <211> 104  
 <212> PRT  
 <213> *Humicola insolens*

<400> 49
Asn Asn Leu Trp Gly Lys Asp Thr Ala Thr Ser Gly Trp Gln Cys Thr
1 5 10 15
Tyr Leu Asp Gly Thr Asn Asn Gly Gly Ile Gln Trp Ser Thr Ala Trp
20 25 30
Glu Trp Gln Gly Ala Pro Asp Asn Val Lys Ser Tyr Pro Tyr Val Gly
35 40 45
Lys Gln Ile Gln Arg Gly Arg Lys Ile Ser Asp Ile Asn Ser Met Arg
50 55 60
Thr Ser Val Ser Trp Thr Tyr Asp Arg Thr Asp Ile Arg Ala Asn Val
65 70 75 80
Ala Tyr Asp Val Phe Thr Ala Arg Asp Pro Asp His Pro Asn Trp Gly
85 90 95
Gly Asp Tyr Glu Leu Met Ile Trp
100

<210> 50  
 <211> 104  
 <212> PRT  
 <213> *Actinomycte sp.11AG8*

<400> 50  
 Asn Asn Arg Trp Gly Thr Ser Ala Thr Gln Cys Ile Asn Val Thr Gly  
 1 5 10 15  
 Asn Gly Phe Glu Ile Thr Gln Ala Asp Gly Ser Val Pro Thr Asn Gly  
 20 25 30  
 Ala Pro Lys Ser Tyr Pro Ser Val Tyr Asp Gly Cys His Tyr Gly Asn  
 35 40 45  
 Cys Ala Pro Arg Thr Thr Leu Pro Met Arg Ile Ser Ser Ile Gly Ser  
 50 55 60  
 Ala Pro Ser Ser Val Ser Tyr Arg Tyr Thr Gly Asn Gly Val Tyr Asn  
 65 70 75 80  
 Ala Ala Tyr Asp Ile Trp Leu Asp Pro Thr Pro Arg Thr Asn Gly Val  
 85 90 95  
 Asn Arg Thr Glu Ile Met Ile Trp  
 100

<210> 51  
 <211> 110  
 <212> PRT  
 <213> Erwinia carotovara

<400> 51  
 Asn Asn Val Trp Gly Lys Asp Glu Ile Lys Gly Trp Gln Gln Thr Ile  
 1 5 10 15  
 Phe Tyr Asn Ser Pro Ile Ser Met Gly Trp Asn Trp His Trp Pro Ser  
 20 25 30  
 Ser Thr His Ser Val Lys Ala Tyr Pro Ser Leu Val Ser Gly Trp His  
 35 40 45  
 Trp Thr Ala Gly Tyr Thr Glu Asn Ser Gly Leu Pro Ile Gln Leu Ser  
 50 55 60  
 Ser Asn Lys Ser Ile Thr Ser Asn Val Thr Tyr Ser Ile Lys Ala Thr  
 65 70 75 80  
 Gly Thr Tyr Asn Ala Ala Tyr Asp Ile Trp Phe His Thr Thr Asp Lys  
 85 90 95  
 Ala Asn Trp Asp Ser Ser Pro Thr Asp Glu Leu Met Ile Trp  
 100 105 110

<210> 52  
 <211> 103  
 <212> PRT  
 <213> Gliocladium roseum

a!  
 Cont  
 <400> 52  
 Asn Asn Leu Trp Gly Met Gly Ser Gly Ser Gly Ser Gln Cys Thr Tyr  
 1 5 10 15  
 Val Asp Lys Val Trp Ala Glu Gly Val Ala Trp His Thr Asp Trp Ser  
 20 25 30  
 Trp Ser Gly Gly Asp Asn Asn Val Lys Ser Tyr Pro Tyr Ser Gly Arg  
 35 40 45  
 Glu Leu Gly Thr Lys Arg Ile Val Ser Ser Ile Lys Ser Ile Ser Ser  
 50 55 60  
 Gly Ala Asp Trp Asp Tyr Thr Gly Ser Asn Leu Arg Ala Asn Ala Ala  
 65 70 75 80  
 Tyr Asp Ile Phe Thr Ser Ala Asn Pro Asn His Ala Thr Ser Ser Gly  
 85 90 95  
 Asp Tyr Glu Leu Met Ile Trp  
 100

<210> 53  
 <211> 100  
 <212> PRT

<213> Artificial Sequence

<220>

<223> hypothetical Gliocladium roseum peptide without  
intron

<400> 53

```
Asn Asn Leu Trp Gly Gln Asp Asn Gly Ser Gly Ser Gln Cys Leu Thr
 1          5          10          15
Val Glu Gly Val Thr Asp Gly Leu Ala Trp Ser Ser Thr Trp Ser
      20          25          30
Trp Ser Gly Gly Ser Ser Ser Val Lys Ser Tyr Ser Asn Ala Val Leu
      35          40          45
Ser Ala Glu Ala Ala Arg Ile Ser Ala Ile Ser Ser Ile Pro Ser Lys
      50          55          60
Trp Glu Trp Arg Ser Tyr Thr Gly Thr Asp Ile Val Ala Asn Val Ala
      65          70          75          80
Tyr Asp Leu Phe Ser Asn Thr Asp Cys Gly Asp Thr Pro Glu Tyr Glu
      85          90          95
Leu Met Ile Trp
      100
```

<210> 54

<211> 104

<212> PRT

<213> Humicola grisea

<400> 54

```
Asn Asn Leu Trp Gly Gln Asp Thr Ala Thr Ser Gly Trp Gln Cys Thr
 1          5          10          15
Tyr Leu Asp Gly Thr Asn Asn Gly Gly Ile Gln Trp Ser Thr Ala Trp
      20          25          30
Glu Trp Gln Gly Ala Pro Asp Asn Val Lys Ser Tyr Pro Tyr Val Gly
      35          40          45
Lys Gln Ile Gln Arg Gly Arg Lys Ile Ser Asp Ile Asn Ser Met Arg
      50          55          60
Thr Ser Val Ser Trp Thr Tyr Asp Arg Thr Asp Ile Arg Ala Asn Val
      65          70          75          80
Ala Tyr Asp Val Phe Thr Ala Arg Asp Pro Asp His Pro Asn Trp Gly
      85          90          95
Gly Asp Tyr Glu Phe Met Ile Trp
      100
```

<210> 55

<211> 105

<212> PRT

<213> Rhodothermus marinus

<400> 55

```
Asn Asn Val Trp Gly Ala Glu Thr Ala Gln Cys Ile Glu Val Gly Leu
 1          5          10          15
Glu Thr Gly Asn Phe Thr Ile Thr Arg Ala Asp His Asp Asn Gly Asn
      20          25          30
Asn Val Ala Ala Tyr Pro Ala Ile Tyr Phe Gly Cys His Trp Ala Pro
      35          40          45
Ala Arg Ala Ile Arg Asp Cys Ala Ala Arg Ala Gly Ala Val Arg Arg
      50          55          60
Ala His Glu Leu Asp Val Thr Pro Ile Thr Thr Gly Arg Trp Asn Ala
      65          70          75          80
Ala Tyr Asp Ile Trp Phe Ser Pro Val Thr Asn Ser Gly Asn Gly Tyr
      85          90          95
```

Ser Gly Gly Ala Glu Leu Met Ile Trp  
 100 105

<210> 56  
 <211> 104  
 <212> PRT  
 <213> Streptomyces lividans

<400> 56  
 Asn Asn Arg Trp Gly Ser Thr Ala Pro Gln Cys Val Thr Ala Thr Asp  
 1 5 10 15  
 Thr Gly Phe Arg Val Thr Gln Ala Asp Gly Ser Ala Pro Thr Asn Gly  
 20 25 30  
 Ala Pro Lys Ser Tyr Pro Ser Val Phe Asn Gly Cys His Tyr Thr Asn  
 35 40 45  
 Cys Ser Pro Gly Thr Asp Leu Pro Val Arg Leu Asp Thr Val Ser Ala  
 50 55 60  
 Ala Pro Ser Ser Ile Ser Tyr Gly Phe Val Asp Gly Ala Val Tyr Asn  
 65 70 75 80  
 Ala Ser Tyr Asp Ile Trp Leu Asp Pro Thr Ala Arg Thr Asp Gly Val  
 85 90 95  
 Asn Gln Thr Glu Ile Met Ile Trp  
 100

<210> 57  
 <211> 96  
 <212> PRT  
 <213> Penicillium notatum

<400> 57  
 Trp Gly Lys Asp Ser Gly Ser Gly Ser Gln Cys Ala Ser Val Asn Ser  
 1 5 10 15  
 Ile Ser Asp Ser Gly Val Ser Trp Ser Thr Thr Trp Asn Trp Ser Gly  
 20 25 30  
 Gly Glu Asp Asn Val Lys Ser Tyr Pro Asn Ser Gly Leu Val Ala Leu  
 35 40 45  
 Lys Lys Gln Pro Val Ser Asp Ile Ser Ser Ile Pro Ser Ser Val Lys  
 50 55 60  
 Trp Asn Tyr Asp Asn Thr Asp Ile Arg Ala Asp Val Ala Tyr Asp Leu  
 65 70 75 80  
 Phe Thr Ala Ala Asp Ile Asn His Asp Thr Ser Ser Gly Asp Tyr Glu  
 85 90 95

<210> 58  
 <211> 87  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> hypothetical Phanerochaete chrysosporium peptide  
 without intron

<400> 58  
 Trp Gly Lys Asp Ser Gly Thr Gly Ser Gln Cys Leu Thr Val Asp Gly  
 1 5 10 15  
 Ile Ser Ser Gly Leu Leu Lys Trp Ser Ala Thr Trp Ser Trp Ser Gly  
 20 25 30  
 Gly Pro Tyr Asn Val Lys Ser Tyr Pro Asn Ala Val Leu Gln Ala Pro  
 35 40 45  
 Ala Ala Arg Ala Ser Ala Ile Ser Ser Ile Pro Ser Lys Trp Gln Trp  
 50 55 60

Glu Ser Tyr Thr Gly Ser Asn Val Ile Ala Asn Val Ala Tyr Asp Leu  
 65 70 75 80  
 Phe Ser Asn Ser Asp Cys Gly  
 85

<210> 59  
 <211> 84  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> hypothetical F42 peptide without intron

<400> 59  
 Ser Gln Cys Thr Thr Phe Glu Ser Leu Ser Gly Asn Thr Ile Val Trp  
 1 5 10 15  
 Asn Thr Lys Trp Ser Trp Ser Gly Gly Gln Gly Val Lys Ser Phe  
 20 25 30  
 Ala Asn Ala Ala Leu Gln Phe Thr Pro Lys Lys Leu Ser Ser Val Lys  
 35 40 45  
 Ser Ile Asp Ser Thr Trp Lys Trp Lys Ser Tyr Ser Gly Ser Asn Ile  
 50 55 60  
 Val Ala Asp Val Ala Tyr Asp Met Phe Leu Ser Thr Ser Pro Gly Gly  
 65 70 75 80  
 Asp His Asn Tyr

<210> 60  
 <211> 100  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> hypothetical Emericella desertoru peptide without intron

<221> VARIANT  
 <222> 6  
 <223> Xaa = Any Amino Acid

<400> 60  
 Asn Asn Leu Trp Gly Xaa Asp Asn Ala Asp Ser Gly Ser Gln Cys Thr  
 1 5 10 15  
 Gly Val Asp Ser Ala Asn Gly Asn Ser Ile Ser Trp His Thr Thr Trp  
 20 25 30  
 Ser Trp Ser Gly Gly Ser Ser Ser Val Lys Ser Tyr Ala Asn Ala Ala  
 35 40 45  
 Tyr Gln Phe Thr Ser Thr Lys Leu Asn Ser Leu Ser Ser Ile Pro Thr  
 50 55 60  
 Ser Trp Lys Trp Gln Tyr Ser Thr Thr Asp Ile Val Ala Asn Val Ala  
 65 70 75 80  
 Tyr Asp Leu Phe Thr Ser Ser Ser Ala Gly Gly Asp Ser Glu Tyr Glu  
 85 90 95  
 Phe Met Ile Trp  
 100

<210> 61  
 <211> 27  
 <212> PRT  
 <213> Myceliophthora thermophilia

<400> 61  
 Ala Asn Val Ala Tyr Asp Leu Phe Thr Ala Ala Asp Pro Asn His Ala  
 1 5 10 15  
 Thr Ser Ser Gly Asp Tyr Glu Leu Met Ile Trp  
 20 25

<210> 62  
 <211> 104  
 <212> PRT  
 <213> Chaetomium brasilliense

<400> 62  
 Asn Asn Phe Trp Gly Gln Ser Arg Ala Thr Ser Gly Ser Gln Cys Thr  
 1 5 10 15  
 Tyr Leu Asp Ser Ser Ser Asn Ser Gly Ile His Trp His Thr Thr Trp  
 20 25 30  
 Thr Trp Glu Gly Gly Glu Gly Glu Val Lys Ser Tyr Ala Tyr Ser Gly  
 35 40 45  
 Arg Gln Val Ser Thr Gly Leu Thr Ile Ala Ser Ile Asp Ser Met Gln  
 50 55 60  
 Thr Ser Val Ser Trp Glu Tyr Asn Thr Thr Asp Ile Gln Ala Asn Val  
 65 70 75 80  
 Ala Tyr Asp Ile Phe Thr Ala Glu Asp Pro Asp His Glu His Ser Ser  
 85 90 95  
 Gly Asp Tyr Glu Leu Met Ile Trp  
 100

<210> 63  
 <211> 102  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> EGI III consensus sequence

<400> 63  
 Asn Asn Leu Trp Gly Lys Asp Ser Gly Gly Ser Gln Cys Thr Thr Val  
 1 5 10 15  
 Asp Ser Leu Ser Asp Gly Gly Ile Ser Trp Ser Thr Ala Trp Ser Trp  
 20 25 30  
 Ser Gly Gly Glu Gly Asn Val Lys Ser Tyr Pro Asn Ser Gly Leu Gln  
 35 40 45  
 Phe Ser Ala Gly Lys Lys Val Ser Ser Ile Ser Ser Ile Pro Ser Ser  
 50 55 60  
 Ala Ser Trp Val Tyr Ser Gly Thr Asp Ile Arg Ala Asn Val Ala Tyr  
 65 70 75 80  
 Asp Leu Phe Thr Ala Ala Asp Pro Asn His Ala Thr Ser Ser Gly Asp  
 85 90 95  
 Tyr Glu Leu Met Ile Trp  
 100

<210> 64  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> BOX 1 peptide

<221> VARIANT  
 <222> 1

<223> Xaa = Asn or Gln

<400> 64

Xaa Asn Leu Trp Gly  
1 5

<210> 65

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> BOX 1' peptide

<221> VARIANT

<222> 4

<223> Xaa = Phe, Leu, Tyr, Ile, Leu, Asn, or Lys

<400> 65

Asn Asn Asn Xaa Trp Gly  
1 5

<210> 66

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> BOX 2 peptide

<400> 66

Glu Leu Met Ile Trp  
1 5

<210> 67

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> BOX 2' peptide

<400> 67

Tyr Glu Leu Met Ile Trp  
1 5

<210> 68

<211> 6

<212> PRT

<213> Artificial Sequence

<220>

<223> BOX 3 peptide

<221> VARIANT

<222> 4

<223> Xaa = Pro or Cys

<400> 68

Gly Thr Glu Xaa Phe Thr  
1 5